



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/781,756

02/20/2004

Keiji Okada

58546.00016

3747

32294

7590

06/19/2006

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER

JONES, JUDSON

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,756

Applicant(s)

OKADA ET AL.

Examiner

Judson H. Jones

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-44, 50 and 51 is/are allowed.
- 6) ☒ Claim(s) 45-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 45, 47 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperling et al. (of record) in view of Nishi 5,194,893 and Harvey et al. 4,835,078. Sperling et al. discloses a semiconductor manufacturing apparatus having a fixed base 1, a movable base 41, a processing base 3, a moving force generating unit 45, 47 all as described in column 9 lines 17-50 with velocity control as described in column 15 line 65 to column 16 line 5 where the apparatus is described as being suitable for a step and scan system. No details are provided for the velocity control. Nishi teaches velocity control in the step and scan type system in column 5 lines 3-63 but does not disclose the reference system used for velocity control. Since Nishi and Sperling et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized the velocity control system of Nishi in order to improve the control of the movable base and processing base in a semiconductor manufacturing apparatus. Harvey et al. teaches controlling two elements that move relative to each other by using a fixed base reference system in column 6 lines 23-28. Since Harvey et al. and Sperling et al. as modified by Nishi are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a

Art Unit: 2834

fixed base reference system for velocity control in order to cheaply and easily control the velocity of the moving members in a scan and repeat system.

In regard to claim 47, see Sperling et al. figure 2 where the Y movement direction is perpendicular to the X movement direction of the processing base.

In regard to claim 49, see Sperling et al. column 8 lines 61-65.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sperling et al. in view of Nishi and Harvey et al. as applied to claim 45 and further in view of Bisschops et al. 6,304,630 B1. Sperling et al. as modified by Nishi and Harvey et al. discloses the semiconductor manufacturing apparatus but does not disclose vacuum processing. Bisschops et al. teaches in column 2 lines 23-34 that increasing the details on a wafer requires smaller wavelength radiation and teaches in column 3 lines 16-21 that smaller wavelength radiation requires a vacuum to keep the radiation from being absorbed. Since Bisschops et al. and Sperling et al. as modified by Nishi and Harvey et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a vacuum in the processing step in order to utilize smaller wavelength radiation and to thus be able to increase the details on the wafer and make the wafer more usable as a computer chip.

Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sperling et al. in view of Nishi and Harvey et al. as applied to claim 45 and further in view of Braat 6,081,578. Sperling et al. as modified by Nishi and Harvey et al. discloses the semiconductor manufacturing apparatus but does not disclose a tilting means. According to Braat column 6 lines 48 and 49, "In sophisticated apparatuses, the substrate can also be tilted about the X axis and the Y axis." Since Braat and Sperling et al. as modified by Nishi and Harvey et al. are from the same field of

Art Unit: 2834

endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a tilt means in order to improve the quality of the semiconductors.

Allowable Subject Matter

Claims 4-44, 50 and 51 are allowed.

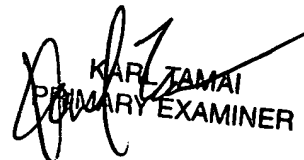
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H. Jones whose telephone number is 571-272-2025. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Judson H. Jones 6/9/2006



KARL TAMAI
PRIMARY EXAMINER